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REMARKS

Reconsideration of the above identified application is respectfully requested.

The specification has been amended at para. 2 to correct an obvious omission of the word "turbine."

Firstly it is noted that the restriction requirement has been overcome, yet the examiner has not provided even one additional reference pertaining to ECM machining even though the examiner has identified two different search fields: class 205, subclass 651, and class 204, subclass 224M.

Reference Bruns, now being used by the examiner, was presented in Applicants' IDS, and is also expressly identified in the Applicants' specification.

Accordingly, Applicants respectfully request that the examiner conduct an updated search of the prior art, including the two classes previously identified by the examiner, and make of record any additional references pertaining to ECM machining.

In particular, the examiner should uncover any references specifically pertaining to setup of ECM machines, which could be used to better appreciate how those skilled in the art view ECM apparatus setup, and the problems associated therewith. This should also afford more weight to the improved apparatus and process being specifically recited in Applicants' claims.

Applicants traverse the rejection of claims 1 and 11 under Section 102(b) over Bruns et al.

The examiner's interpretation of Bruns is not supported by the evidence thereof, and is not supported by the further description thereof as presented in the present specification.

More specifically, the examiner's reference to "see col. 16, lines 4-24 that the method may include a second machining

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step to create a second row of blades" is neither accurate, nor supported by this reference.

Col. 16, lines 4-24, of Bruns merely states that "the invention may be used to machine blades of axially adjacent tandem blisks, i.e., two blisks integrally formed," yet the following description pertains only to a modification to the hardware to accommodate the small spacing between two blisks.

The examiner's conclusion that: "The two steps of machining occur back-to-back without removal of the blisk from the machining apparatus," is erroneous, not supported by the reference, and is clearly hindsight speculation, without regard to the more detailed description of this reference as found in the present specification.

Indeed, the examiner even attempts to use that very description of the Bruns reference in Applicants' own specification to bootstrap the various rejections of all remaining claims under Section 103, without affording full weight to that very description.

The examiner has overlooked the fundamental teachings of the Bruns reference in disclosing a new type of ECM apparatus and corresponding method of use, in which the setup of such apparatus is not relevant thereto, nor disclosed.

The present specification explains at various locations how an apparatus constructed in accordance with the Bruns reference has been in fact used in practice.

Para. 8 specifically introduces USP 4,851,090.

Para. 10 introduces the necessary setup of the ECM machine disclosed therein.

Para. 12 explains the elaborate setup of that ECM machine including: "The sample must then be removed from the machine and inspected to accurately determine the dimensions thereof, which are then compared with the desired final dimensions for the blades."

Para. 13 explains that "the setup procedure is normally

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repeated several times ... to ensure proper alignment of the blisk in the machine, proper alignment of the electrode tools on their supporting head, and proper machining of the individual blades."

Para. 14 further explains that the production blisk is then mounted in the machine only after the "setup procedure is finally completed."

Para. 15 then explains "The manufacture of gas turbine engine blisks is made even more complex for tandem blisks" in view of the different configurations of the stages and different electrode tools which require corresponding setup.

Para. 17 explicitly explains that two setup procedures are required for the tandem blisk using the ECM apparatus of the Bruns reference, in which the tandem blisk is necessarily removed from the machine between ECM of the two stages for the required setup procedures.

The examiner has clearly failed to afford any weight to these express teachings in the present specification of the actual use of the ECM apparatus based on the Bruns reference, and has attempted to use the Bruns reference itself in a vacuum without regard to the express teachings thereof.

The examiner has not identified any teaching in Bruns as to the necessary setup procedure for either the single or tandem blisks; and clearly the examiner's use of col. 16, lines 4-24, fails to satisfy the stringent requirements to support a rejection under Section 102.

In *Lindemann Maschinenfabrik GmbH v. American Hoist and Derrick Co.*, 730 F.2d 1452, 221 USPQ 481 (Fed. Cir. 1984), anticipation requirements under 35 U.S.C. §102 are presented as follows:

Anticipation requires the presence in a single prior art reference disclosure of each and every element of the claimed invention, arranged as in the claim. In deciding the issue of anticipation, the trier of fact

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must identify the elements of the claims, determine their meaning in light of the specification and prosecution history, and identify corresponding elements disclosed in the allegedly anticipating reference. (citations omitted).

The Board of Patent Appeals and Interferences in *Ex parte Levy*, 17 USPQ2d 1461, 1462 (B.P.A.I. 1990) cites *Lindemann* to place the burden of proof upon the examiner as follows:

Moreover, it is incumbent upon the examiner to identify wherein each and every facet of the claimed invention is disclosed in the applied reference.

Furthermore, the Federal Circuit further held in *Lewmar Marine, Inc. v. Barient, Inc.*, 3 USPQ2d 1766, (1987), cert. denied, 108 S.Ct. 702 (1988) that:

"[t]hat which would literally infringe if later in time anticipates if earlier than the date of invention."

Accordingly, anticipation under 35 U.S.C. §102 requires disclosure by a single reference of each and every element recited in a claim functioning in the same manner to produce the same result as the claimed invention.

Claim 1 is a method claim which expressly recites ECM machining of a tandem blisk in two sequences for the first and second blade rows "while still mounted in said machine."

As indicated in Applicants' specification in the description of the Bruns reference, the ECM apparatus in Bruns is neither configured nor operated to perform ECM machining of the blisk without necessarily removing the blisk from the machine to accomplish the necessary setup of the second stage.

The examiner has not shown any evidence in Bruns that the blisk is or can remain in the machine during the two-

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stage ECM machining thereof. The rejection of claim 1 is therefore without evidentiary basis, and is unwarranted.

Claim 11 is an apparatus claim which recites the configuration of the ECM machining for machining the second row of blades "in another stage of said blisk while still mounted in said machine."

As indicated above, the examiner has failed to provide any evidence that the ECM machine of the Bruns reference is configured or operated for sequential machining of the second stage without removing the tandem blisk. And, to the contrary, Applicants' specification makes clear that the tandem blisk must be removed in the Bruns reference to perform the necessary setup procedure before the second stage can be accurately machined.

The examiner's mere contention that "the apparatus of Bruns et al teaches the claimed two means for electrochemical machining, as the machining means of Bruns et al are capable of performing both steps," is erroneous, and not supported by any evidence therein.

Claim 11 clearly recites two different means for ECM machining the first and second rows; and the examiner admits at line 2 of page 4 of the office action that "Bruns et al does not teach using two pairs of electrodes...."

This is only one difference between claim 11 and the Bruns reference, a difference admitted by the examiner, which prevents any finding of anticipation under the stringent requirements of Section 102.

Accordingly, withdrawal of the rejection of claims 1 and 11 under Section 102(b) over Bruns et al is warranted and is requested.

Applicants traverse the rejection of claims 2-10 and 12-20 under Section 103(a) over Bruns et al and the examiner's contention of "Applicant's admission of prior art" (AAPA).

The examiner's basis for the rejections is mere

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superficial conjecture based on an incomplete and inaccurate interpretation of the Bruns reference, compounded in error on alleged "Applicant's admission of prior art" taken out of context in complete disregard of express teachings of the invention found in the specification.

35 USC 102 enumerates various forms of "prior art," none of which includes the written specification of a patent application being examined.

MPEP 2129 indicates that "prior art" in an application must be so expressly stated.

So, where then has the examiner specifically found in the specification a verbatim reproduction of the rejected claims, and the admission that those claims are AAPA as the examiner contends?

Virtually all inventions are combinations of old or conventional elements. Yet it is the combination being claimed which must be examined for patentability, not its individual elements.

The specification clearly points out the individual elements recited in the claims, how they are combined, and the benefits therefrom. Where does the examiner find in the specification that such combination claims are "AAPA?"

The examiner's use of the specification clearly takes isolated descriptions out of context in complete disregard of the express combination of elements, and in disregard of the whole invention being recited in each claim.

The examiner also completely disregards the express description in Applicants' specification of the ECM apparatus based on the Bruns reference, how it is operated, the problems associated therewith, and Applicants' present solutions therefor, and Applicants' corresponding modifications of structure and operation of the ECM apparatus of the Bruns reference.

The examiner's various statements in pages 4 to 7 of the

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office action fail to provide an objective evaluation of the applied reference, or Applicants' description thereof, and how the present invention is quite different.

Instead, the examiner evaluates the Bruns reference not for what it expressly teaches, but for what it fails to teach. And, correspondingly, the examiner applies the expedient of AAPA not for the fundamental differences between Applicants' invention and the Bruns reference, but for the similarities therebetween; and then must rely on the further expedient of "duplication of parts," without due regard to the requirements therefor.

The examiner has therefore thrice compounded the errors in fabricating the omnibus rejections of all claims 2-10 and 12-20; which clearly undermines the rejections under Section 103.

The examiner's initial reference to the Graham case is merely the beginning of the required analysis under Section 103. The MPEP includes many detailed provisions in implementing Graham including section 706.02(j) which expressly provides the basic requirements that must be provided by the examiner in establishing prima facie obviousness under 35 U.S.C. 103.

Four steps are required of the examiner including: (1) relevant teachings; (2) claim differences; (3) proposed modification of the reference(s) to arrive at the claimed subject matter; and (4) an explanation the proposed modification would have been obvious under Section 103.

The MPEP also requires a showing by the examiner of three basic criteria to establish a prima facie rejection including: first, evidence for the suggestion or modification for modifying or combining references; second, a reasonable expectation of success; and finally, the reference(s) must teach or suggest all the claim limitations, and cannot be based on applicant's own disclosure.

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Citing *Ex Parte Clapp*, the MPEP places the burden of proof on the examiner to provide evidence to support the conclusion of obviousness either from the references which must expressly or impliedly suggest the claimed invention, or the examiner must present a convincing line of reasoning as to why the artisan would have found the claimed invention to have been obvious in light of the teachings of the references.

It is the examiner who must meet this initial burden by applying specific evidence; and clearly the examiner has not met this burden with the unsupported duplication-of-parts contentions and "therefore" conclusions of obviousness, which fail to meet the stringent "legal motivation" requirements of MPEP ch. 2100.

And, the examiner has failed to separately analyze the method claims differently from the apparatus claims, with the MPEP having correspondingly different analysis therefor.

Fundamental to all rejections under Section 103 is the examiner's use of MPEP 2144.04 and duplication of parts. However, the examiner has failed ab initio to show any factual similarity between any of the present method or apparatus claims and the factual basis required to implement section 2144.04.

The MPEP cites *In re Harza*, and the corresponding facts for finding the mere "plurality of ribs" as parts duplication. Yet, the examiner has not shown any nexus with Applicants' present claims.

Nor, has the examiner providing any legal motivation to modify *Bruns*; and the examiner's contentions presented at the top of page 4 are without any technical or logical basis, and are mere speculation.

Fundamental to the examiner's erroneous interpretation is the mere statement that "the duplication of the electrode pairs would allow for easier fine tuning since, as admitted

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by Applicant (see paragraph 15) that in tandem blisks, the two rows of blades have different configurations."

What does this statement mean? What is "fine tuning?" What is the "admission" being made by the Applicants?

Where is the legal motivation to duplicate the electrodes?

The examiner is not permitted to use Applicants' own disclosure to reject Applicants' own claims: this is fundamental in patent law.

"Fine tuning?" Applicants' Background section explains the use of ECM machining based on the Bruns reference, and its associated problems, particularly in the required setup thereof for accurately machining complex and expensive blisks.

Para. 15, specifically identified by the examiner, indicates the additional complexity in ECM machining tandem blisks, without any indication of "fine tuning" as the examiner contends.

To the contrary, Para. 15 expressly states that not only are different sets of tools required, but that "corresponding setup of the ECM machine is required for machining each of the two stages of the tandem blisk."

Bruns already utilizes "duplication of parts," i.e., different electrode tools for each different type of rotor blade being ECM machined. Bruns therefore does not require any further modification to utilize such duplication of parts, which undermines the examiner's mere attempt to use MPEP 2144.04 without explanation of further modification associated therewith.

Paras. 12-14 & 16-18 clearly indicate that even with two sets of tools, or the examiner's duplication of parts, the blisk must still be removed from the machine.

Claims 2 and 12 are diametrically opposite to the teaching of Bruns and Applicants' Background section: the

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second sequence is conducted "while [the blisk is still] mounted in said machine." See paras. 58, 60, 71, and 73 which emphasize this important distinction, for which the examiner has failed to afford any weight.

The examiner also concludes that "Thus, one of ordinary skill in the art would have duplicated the electrode pairs in order to optimize each electrode pair for the individual blades of the two rows." Yet again, what does this mean, and where is the evidentiary support and legal motivation therefor?

The examiner again overlooks that the electrode pairs have already been duplicated in the prior art, see paras. 15 and 16, specifically to ECM the different stages of blades. This is not the issue.

In Bruns, the different electrode pairs are simply alternately used in the same ECM machine, which leads to the specific double set-up problem being solved by the present invention.

The examiner's duplication of parts contention is therefore inadequate and incomplete, and fails to specifically address either the different method recited in claim 2 or the different machine recited in claim 12.

This one expediency being employed by the examiner is clear evidence of the failure to afford due weight to each claim in the whole, since each claim in the whole is quite different than the other claims; and the machine claims and method claims are also fundamentally different as recognized by the MPEP, and by the examiner in the restriction requirement, now withdrawn.

Where is evidence of any problem in Bruns for which the examiner's proposed solution would be relevant? Where is any evidence of the requisite legal motivation to alter the machine in Bruns in any manner, let alone the manner corresponding with Applicants' claims?

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Where is any evidence that one skilled in the art would make the apparatus of Bruns even more complex than it already is, and for what advantage?

Assuming arguendo that the ECM machine of Bruns would have been further altered to duplicate the electrode pairs, where is the requisite teachings as to how that would be done? And, how would the machine be operated?

Would not the mere duplication of parts in Bruns simply place two sets of electrodes on the common turntable 56 instead of adding another turntable?

In either alternative, would not the basic teaching of Bruns still require that the blisk be removed from the machine at least once, and most likely several times to complete the setup process for each stage of the tandem blisk?

Where is the evidence that the blisk in Bruns should remain in the machine between the processing of the two stages, and why? The evidence in Bruns itself, and in Applicants' Background section is clearly contra to the examiner's proposed interpretation thereof.

Clearly, the examiner is working in hindsight; knowing in advance what Applicants' claims recite, and then re-characterizing Bruns, disregarding Applicants' Background description of the common use of the ECM machine in reality, and fabricating the various rejections based fundamentally, and erroneously, on the mere duplication of parts.

Applicants' recited claims are much, much more than a mere duplication of parts, reflected in the different method claims and apparatus claims, given little if any weight by the examiner in the rush to reject the claims in toto.

The MPEP requires much more in the analysis and evidentiary requirements in supporting a rejection under Section 103. And, legal motivation is a fundamental requirement to support any rejection under Section 103, and

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the examiner's various contentions are mere conclusions, lacking specific evidentiary basis and legal motivation.

Claim 2 recites the method, and claim 3 recites the corresponding means 26,28 for moving the blisk in different directions for machining the first and second row blades.

The examiner has failed to identify any modification of Bruns in which such structure and operation would even be possible.

Why not mount the two electrode sets on the same turntable 56 in Bruns, or the same wall? Why must the blisk 12 in Bruns move in two different directions? How would the machine in Bruns be modified for the two directions?

Duplication of parts, the examiner simply opines. Then should not there be duplicate shafts 70 to mount the blisk for operation with the duplicate set of electrodes?

Bruns discloses many, many components, which according to the examiner's logic would have been duplicated for any reason. Why select only those changes to Bruns deemed necessary by the examiner to reject Applicants' claims?

The answer is clearly hindsight, since the examiner has failed to identify any problem in Bruns which needs solving, and has failed to identify the evidence in Bruns to support any modification of the machine or its method of use, or the legal motivation therefor.

In para. 4 of the office action, the examiner merely opines that "the machining means of Bruns et al are capable of performing both steps," yet neither Bruns itself, nor Applicants' Background description of a corresponding Bruns machine support this mere examiner speculation, and the examiner has conspicuously failed to uncover even one more reference in the field of ECM machining from which the knowledge of those skilled in the art could be obtained to support his mere unsubstantiated contentions.

Applicants Background section clearly explains that the

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machine in Bruns is clearly not capable of "performing both steps" as the examiner contends. That machine requires modifications from stage to stage being machined, with corresponding electrodes.

That machine also requires a corresponding setup procedure in which the blisk must be removed from the machine for examination. That procedure must be conducted for each stage; and therefore, the examiner has no basis to reject independent claims 1 and 11, and the claims dependent therefrom, all of which recite that the blisk remains in the machine for the two machining sequences.

The examiner's mere reliance on "duplication of parts" does not change these fundamental teachings of Bruns, nor the actual use thereof for one skilled in the art.

Claims 3 and 17 recite methods for setting up the ECM machine in which sample blades in two stages are machined, the blisk removed and reinstalled until specifications are met, followed by the machining of both stages without further removal of the blisk between the two sequences.

The examiner's reference to paras. 12-14 of the Background section applies only to a single blisk; and conspicuously overlooks the express teaching of tandem blisks presented at paras. 15 et seq. Those paragraphs clearly indicate that one skilled in the art would indeed duplicate the setup process, and that would be done with removal of the blisk from the machine between the two sequences, which is quite opposite to the methods recited in these claims.

The examiner simply opines that "it would have been obvious to a routineer in the art to have operated the two electrode pair machine in the same manner." And, what is that manner?

That manner as indicated in Applicants' Background section is to remove the blisk between the two sequences, and the examiner has not shown otherwise.

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The examiner has failed to identify any teaching in Bruns to support his contention.

The examiner has failed to explain what the specific duplication of parts would be in the modified Bruns machine, and why they would be duplicated.

And, most fundamentally, the examiner has failed to provide any evidence to change the setup procedure of Bruns in the manner now being taught and claimed by Applicants in the present application.

Claims 4, 8, and 13 recite a specific species of offsetting the tool pairs and translating the blisk therebetween, which the examiner merely paraphrases using mere conclusory statements without regard to the stringent requirements of the MPEP, and without regard to the specific advantages of these claims as presented in the specification.

The examiner merely contends "bulky" and "highly difficult," but where is the evidence to support these bald contentions? How are these contentions relevant to the claims? And, where is any legal motivation to alter the basic configuration of Bruns?

These very contentions being made by the examiner for claims 4, 8, and 13 are evidence in and of themselves of the non-obviousness of the claims from which they depend, since the examiner previously opined that the claims include mere duplication of parts.

What is it then, mere duplication of parts in the simplistic manner presented in the MPEP, or further modifications of the basic ECM apparatus in Bruns and in its parts for these more specific detailed claims.

The examiner has been caught in his own trap; relying first on mere duplication of parts, and then in subsequent argument inherently recognizing that much, much more that parts duplication is involved.

How is the ECM machine of Bruns "bulky" in any manner

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relevant to Applicants' claims?

How would it be "highly difficult to arrange the second means such that it would not interfere with the first means?"

If this contention of the examiner were true, then why would not the "highly difficult" realization be evidence of the non-obviousness of the parent claims instead of the examiner's proposed basis of simple parts duplication?

The examiner now places the Applicants in the curious position of substantiating the examiner's own distorted logic. The examiner argues that it would be "highly difficult to arrange," but assuming *arguendo* that the second means would be a mere duplication of parts, why not simply place that second means on the same wall as the first means, or on any of the other three possible walls in Bruns?

If the examiner's second means were placed diametrically opposite to the first means disclosed in Bruns, how would the bulky argument and the difficult argument proffered by the examiner have any significance?

In para. 64 of the specification, Applicants disclose the diametrically opposite embodiment.

In para. 65, Applicants disclose the offset embodiment for the specific advantages disclosed in the specification.

The examiner's mere contentions of "bulky" and "difficult" are clearly hindsight fabrications, and have no relevance to the claims being examined.

The examiner even compounds the errors of this rejection, by additionally arguing that due to the two planes "a routinier in the art would have added means for translating the position of the blisk from one means to the other."

If the two means and planes being proffered by the examiner are mere duplication of parts, why then would one skilled in the art desire to further modify them? Is this more complex modification in and of itself additional

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evidence of the non-obviousness of the combinations being claimed?

The examiner begins the various rejections based on the lack of teaching of the basic reference Bruns; and then builds the rejections based on Applicants' own teachings in the specification; and then further builds the rejections by adding together more levels of mere examiner argument taking for granted the previous levels of mere argument as fact, neither based on any identified evidence, nor supported by any identified legal motivation.

The examiner's bald rejection of claims 5 and 14 is further evidence of the failure to afford due weight to the specific claims being reviewed, and the failure to identify evidence in Bruns, and the requisite legal motivation for supporting the rejection.

The examiner now opines that "it would have been within the expected skill of a routinier...", again repeating the "bulky" contention and the "interfere" contention previously made.

The examiner has clearly misinterpreted claims 5 and 14, for nowhere do these claims recite that the blisk is "fixed." And, the examiner has failed to afford any weight to the translation elements "without removing said blisk and tools from said machine."

The examiner should therefore reconsider the express recitations in claims 5 and 14, and will then see the plain error in his interpretation thereof.

As indicated above, paras. 12 et seq clearly disclose that the machine of Bruns is configured and operated for removing the blisk during the setup procedure, and removing and replacing the electrode tools between blisk stage processing, a clear teaching against the examiner's rejection of claims 5 and 14.

The examiner has not provided any evidence of the

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"expected skill of a routineer," and the evidence provided by the Applicants is specifically contra to the examiner's mere argument.

Examiner argument is never evidence, and Applicants request that the examiner update his search and provide evidence to support the various unsupported contentions in the event the examiner continues in this line of rejection. Without suitable evidence, the various rejections cannot be made or sustained.

Claims 6 and 15 recite rotation of the first and second tool pairs 26,28 as the blisk is moved in the two directions.

The examiner's few comments fail to meet the stringent requirements of the MPEP, and fail to afford due weight to the claims being examined.

The examiners identifies "col. 5, lines 1-19" of Bruns for a teaching of "rotating the electrodes during machining," but these lines 1-19 instead disclose the second turntable 74 for rotating the shaft 70.

As indicated above, Bruns clearly discloses a single turntable 56 for mounting the electrodes 18,20; and claims 6 and 15 require not only rotation of the two sets of tools, but also that this is accomplished without removing the blisk between stage machining.

The clear teachings of Bruns require removal of not only the electrode tools for machining subsequent stages, but also removal of the blisk for the requisite setup procedure, overlooked by the examiner in the rush to reject claims 6 and 15 without full analysis thereof, or weight to the combination of features recited therein.

Claims 7 and 16 recite the different configurations of the first and second row blades and the complementary first and second tool pairs 26,28.

The examiner merely attempts to utilize para. 15 of Applicants' own disclosure for the mere recognition of

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different blade stages, and then jumps to the bald conclusion of obviousness bypassing completely the stringent requirements of the MPEP.

The issue in claims 7 and 16 is not the different elements thereof for the two blade rows, but that the one process and the one apparatus are specifically configured to ECM the two stages with one setup procedure, and without removing the blisk between the two sequences.

As indicated above, Bruns clearly requires blisk removal between ECM sequences, and corresponding setup procedures.

And, the very para. 15 being cited by the examiner additionally discloses that corresponding setup of the machine is required, in which the blisk is necessarily removed.

The clear evidence of record does not support the examiner's bald contentions of obviousness, but to the contrary, supports the non-obviousness of the claims. The examiner's mere argument and conclusions are without identified evidence, and cannot overcome the clear teachings of the very reference Bruns being applied by the examiner.

The examiner's use of para. 12 of Applicants' own specification to support the rejection of claims 9 and 10 is clear evidence of the failure to afford any weight to these dependent claims, let alone due weight.

Claims 9 and 10 cannot be examined in a vacuum as the examiner's simple comments indicate. They must be read in the whole in which the blisk sample is either the same as the tandem blisk or a different part, and which sample is firstly removed from the machine for inspection, and the tandem blisk is installed following setup for machining in subsequent sequences without further removal before the second sequence machining.

As indicated above, notwithstanding the type of sample disclosed in para. 12 for the ECM machine of Bruns, that

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machine in Bruns necessarily requires removal of the blisk for setup before the second stage can be machined.

Independent claim 18 is being rejected by the examiner for the same reasons previously presented by the examiner, with the repeated admission by the examiner of the fundamental shortcomings of Bruns and the lack of teaching thereof.

The examiner again attempts to employ MPEP 2144.04 for the same duplication of parts argument without the requisite showing of factual similarity with the *In re Harza* case. The examiner further attempts to use the same argument contending admissions by the Applicants in the specification, yet again without legal and factual support.

The examiner clearly compounds the errors by now combining the various mere examiner contentions together in an attempt to reject claim 18 with its many combinations of features nowhere disclosed or suggested in Bruns.

The examiner attempts to use Applicants' own disclosure, and Applicants' own teachings to bootstrap the rejection of claim 18 without evidentiary or legal support, and clearly failing to provide any legal motivation for modifying Bruns as required by the MPEP.

Of course, any reference, including Bruns, could have been modified by one skilled in the art, but the examiner cannot use Applicants' own disclosure to support that modification based on Applicants' own invention being recited in the claims. This is clear error; compounded again and again by the examiner in the rush to reject all 20 claims of record, without regard to the fundamental differences between the method claims and the apparatus claims, and the different requirements therefore as presented in the MPEP.

For claim 18 the examiner merely opines "duplication of parts," without evidence thereof. "Fine tuning," without explanation as to what this means, and without a showing of

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legal motivation.

"Optimize each electrode pair" without presenting any nexus to the specific claims being recited.

"Different locations (planes)," "bulky," "highly difficult," "not interfere," and "routineer ... would have added means for translating the position of the blisk...." All these contentions lack any logical or legal nexus with the claims, and are against the very teachings of the Bruns reference being applied by the examiner.

The examiner can only fabricate the various rejections based on the guidelines of Applicants' own claims and the problems which they solve.

Without Applicants' claims and without Applicants' specification, the examiner, and one skilled in the art would not know what to modify in Bruns, why to modify it in any manner, let alone in the manner specifically recited in the various method and apparatus claims.

The rejection of dependent claim 19 also fails to meet the stringent requirements of the MPEP. The examiner contends that Bruns discloses "means (54)," but the examiner overlooks that Bruns also teaches that tandem blisks are machined in the same manner for each stage; and Applicants' specification explains the requisite setup for each stage, which requires removal of the blisk for examination, and between stage machining.

Claim 19 cannot be read in a vacuum for any similarities it may have with the ECM machine of Bruns, but it must be read for its differences, for those differences are profound, and solve problems neither disclosed by Bruns nor uncovered by the examiner in his search of the various art classes.

The examiner's rejection of independent method claim 20 is equally defective for the mere repetition of previous arguments including the mere duplication of parts.

The examiner has clearly failed to explain how and why

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Bruns would have been modified in any manner based on identified evidence and based on the legal motivation required in the MPEP.

That the ECM machine of Bruns could have been modified does not make all modifications thereof obvious as the examiner's bald contentions would necessarily require.

Claim 20 recites the method of ECM machining the tandem blisk without removing the blisk between the sequences and without re-setting up the tools.

The examiner's mere contention to duplicate the electrode tools fails ab initio to support even a prima facie case since Bruns is silent on the setup procedure, and Applicants' specification expressly discloses that setup procedure as necessarily requiring removal of the blisk between machining sequences in Bruns.

The ECM machine of Bruns is a remarkably complex and expensive machine and corresponding system, and the examiner has provided no evidence why one skilled in the art would further add to that complexity and expense for merely duplicating parts.

The evidence is clear that the single ECM machine is used as is for repeatedly ECM machining batches of the same parts each containing repetitive blades thereon, with no teaching or suggestion of the need or benefit to duplicate the parts of the basic machine to increase the throughput.

It is only the examiner, with the advantage of hindsight and without regard to what would have been known by those skilled in the art who is fabricating rejection after rejection of all 20 claims without regard to the substantial combination of elements thereof.

The examiner has failed to provide even one additional reference in the art of ECM machining which would support the complex nature thereof.

It is the examiner who is using the dearth of evidence

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to reject the claims based on that dearth of evidence for what is not disclosed therein, since that omission is esoteric and complex, and would necessarily teach away from the invention as recited in the claims.

The mere duplication of parts argument is a common thread in all the rejections under Section 103; along with the common use of Applicants' own disclosure for distorting that disclosure in the guise of "Applicant's admission of prior art."

The requisite analysis under the MPEP is stringent, and the examiner should be mindful of using Applicants' own disclosure in fabricating the rejections.

The prior art is replete with individual elements, and the mere recognition of conventional elements does not in and of itself provide any basis to render combination claims obvious for the naked elements thereof.

The examiner's various rejections are conspicuous in the selective extraction of individual features from the claims and using Bruns or Applicants's own specification for comparison, with the mere conclusion of obviousness based on fabricated reasons having no identified support in Bruns, and failing to meet the legal motivation requirements of the MPEP.

The examiner should reconsider the various rejections and the modicum of evidence in support thereof. Bruns is quite clear in its basic teachings of the multiaxis ECM machine, now being substantially improved in view of the complex setup procedure required therefor.

Applicants' specification explains in great detail how the ECM machine of Bruns would be setup in reality, and provides teaching not found in the Bruns reference itself. This evidence should be given due weight by the examiner, and should not be disregarded in part by the examiner in selectively choosing from that evidence only that which would

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appear to support a rejection under the applicable patent laws.

An objective evaluation of the evidence of record, including the Bruns reference, and the corresponding disclosure in Applicants' specification in regards thereto will clearly indicate that one skilled in the art practices the prior art method by repeatedly removing and re-installing the blisk for the setup procedure, which is repeated for subsequent stages of tandem blisks, with the corresponding electrodes being replaced.

There is no problem disclosed in Bruns for which the examiner's solution would have any relevance; and the MPEP makes clear that evaluation of the whole requires evaluation of the specific problem confronting the inventor. The MPEP also makes clear that even the discovery of the problem can be used in evaluating the whole leading to the non-obviousness of an invention.

The examiner has not shown any evidentiary or legal basis to modify Bruns in any manner, nor for duplicating its parts in any manner not already found in that reference. But for Applicants' own disclosure what parts in Bruns should be duplicated and how?

Why has the examiner chosen to duplicate the electrodes? Clearly, by the guidelines of Applicants' claims.

How should the electrodes be duplicated? The examiner has not explained this.

And, where is the legal motivation to modify Bruns in any manner, and where is the specific evidence therefor? This too the examiner has failed to provide.

Accordingly, withdrawal of the rejection of claims 2-10 and 12-20 under Section 103(a) over Bruns et al and "Applicant's admission of prior art" is warranted and is requested.

In accordance with the duty imposed by 37 CFR 1.104 and

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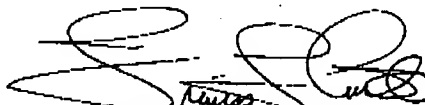
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MPEP sections 707, 707.05, 707.07, and 707.07(g), the examiner is requested to update the search to include the classes previously identified in the restriction requirement to ensure full compliance with the required thoroughness of examination.

In re Portola Packaging, Inc., 42 USPQ2d 1295 (Fed. Cir. 1997) emphasizes the importance of complying with this duty to ensure that all relevant references have been uncovered fully considered by the examiner in the various combinations thereof. And, the Board of Appeals has further elaborated on the importance of this examiner duty in Ex parte Schriker, 56 USPQ2d 1723 (B.P.A.I. 2000).

In view of the above remarks, allowance of all claims 1-20 over the art of record is warranted and is requested.

Respectfully submitted,



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